Mimulus Memo

California Native Plant Society
KERN CHAPTER

JANUARY 2021

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EVENTS

APRIL

Zoom Program
Flora of Salmon Creek & Manter Meadow,
Time TBA

JULY & AUGUST

No Programs

OCTOBER

Zoom Program,
Harry Potter's Muggles' Guide to Native Plants
Time TBA

Covid-19 Escapes for Plant Lovers ...Making the Best of a Lockdown

by Paul Gipe

WE'VE BEEN IN VARIOUS STAGES OF COVID-19 LOCKDOWNS for nine months now. We miss our friends, our colleagues, and our get-togethers. Our solution to keep from going stir-crazy has been a weekly **Covid Escape**.

Those who follow me on **Facebook** or **LinkedIn** know of our escapades. Yes, we flee the lockdown and take a hike somewhere within two or three hours of Bakersfield. It's been good for our sanity and we've seen a lot of lovely country that we were always too busy to visit before.

Our Covid Escapes are bit more challenging than most because we drive an electric car. So if we can do it, those of you in a "gasser" should have no problems.

The farthest we've ventured was **Horseshoe Meadows**, some 180 miles away, where we botanized at 10,000 feet and Nancy found gentian flowering in late October. Most destinations are much closer to home. We've been to **Mount Pinos** four times to catch seasonal changes to the summit's flora, including a hike to nearby **Sawmill Mountain**. All told we've taken 35 day trips.

Even in December we've found flowering plants.

While campgrounds and visitor centers are closed, most trails are open for socially-distanced hiking. Check before you go. Officially, state parks "*recog-*

Photos by Nancy Nies

Cliff goldenbush (*Ericameria cuneata*). Hanging gardens in Kern Canyon. **28 October 2020.**

Right: Wire lettuce (*Stephanomeria exigua*). Tehachapi Mountain. **30 September 2020.**

nize that mental health is physical health. As such, day use outdoor areas of park units currently open to the public will remain open" during the lockdown.

California fuchsia (*Epilobium californicum*). Bull Run Creek. **28 October 2020**.

In the process of heading out on our Covid-19 "day off" we've found new locales for future CNPS field trips, such as the **Chimeneas Ecological Reserve** off of Hwy 166 near New Cuyama and **Aliso Canyon Road** nearby. Even in December we've found flowering plants. On a hike from **Red Cliffs Natural Area** in **Red Rock Canyon SP** to **Nightmare Gulch** we found a sturdy **tarweed** brightening up the trail. Elsewhere we've stumbled across sturdy **wire lettuce** in bloom. **Bladderpod** is another winter bloomer that you can find almost anywhere.

Gooseberry (*Ribes sp*). Squirrel Meadow, Breckenridge Mountain. **2 September 2020.**

Kern tarweed (*Deinandra pallida*). Red Rock Canyon SP, Red Cliffs Natural Area. **25 November 2020.**

Coyote melon (*Cucurbita palmata*). Wind Wolves Preserve. **2 December 2020.**

And even when they're not in bloom, some plants are distinctive enough after they've gone to seed that they're easy for a novice to identify. On the **Tule Elk Trail** at **Wind Wolves Preserve** it's not hard to spot the dried stalks of solitary **milkweed** poking up through the vast fields of non-native grasses.

Don't overlook the trees and shrubs that liven up our landscape. Hike through the Joshua tree forest at **Saddleback Butte SP** or see the mesquite at **Mesquite Springs** on the Red Rock-Randsburg Road.

We're fortunate to live in a place where there's so much to see such a short distance away. Get out. Explore. ✿

Vinegar weed (*Trichostema lanceolatum*). Chimenas Ecological Reserve. **4 November 2020**

President's Message: Fruticose Lichens in California & Baja California Include Many Rare Species

by Rich Spjut

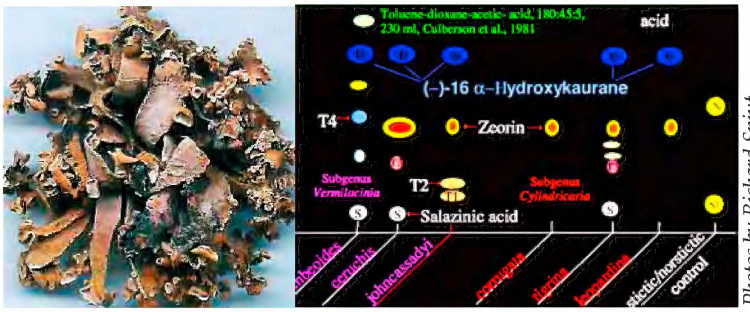
IN THE MARCH 2016 ISSUE OF THE *MIMULUS Memo*, I reported on my field expedition to **Baja California** as co-investigator with **Professor Emmanuël Sérusiaux** of the **University of Liège** in Belgium, a specialist on the taxonomy of the lichen family Ramalinaceae. He was interested in analyzing the DNA relationships among the species within the genera ***Niebla***[i] and ***Vermilacinia***[ii] and their evolutionary (phylogenetic) relationships to other genera. They are conspicuous fruticose[iii] lichens in the coastal fog of California, Baja California and Baja California Sur. An example is *Niebla effusa* that grows like throw-rugs on the ground — spreading to more than one meter in length and one kg in weight — perhaps undisturbed for many decades or centuries, and reported to contain **skyrin**[iv].

The results were recently published in MycoKeys 73: 1–68 (Sept 11, 2020).[v] So what differences have emerged in the classification of genera and species of fruticose Ramalinaceae?

In 1996, I described 42 species in *Niebla* and 28 in *Vermilacinia*, 53 of which were new to science[vi], preceded by the new genus *Vermilacinia*[vii] in 1995. The species were distinguished by morphology and chemistry, the latter using thin-layer-chromatography (TLC). One new species is *Vermilacinia zebrina*, the type collected by the late lichenologist **Mason Hale** not far from the **Humboldt State University** campus. Since then, the zebra vermilacinia was discovered in Namibia besides already known to coastal California and Baja California.

In 2004, **Peter Bowler** and **Janet Marsh**, in the **Lichen Flora of the Greater Sonoran Desert Region** (LFSD, Vol.2, Nash et al., eds.), accepted only three of the 42 *Niebla* species, and only eight of the 28 *Vermilacinia* species, all treated in *Niebla*. They further included six species in the Mediterranean region and two species in South America. Their taxonomy was largely based on morphology.

In 2020, I, along with **Antoine Simon, Martin Guissard, Nicolas Magain**, and Emmanuël Sérusiaux, reported that DNA supports distinction of the New World and Namibia genus *Vermilacinia*, and we recognized four new species



Photos by Richard Spjut

Left: *Vermilacinia johncassadyi*, a rare lichen known only to grow on the northwest ocean cliffs of Mexico's Isla Cedros and Punta Cono, is distinguished by the thallus having blade-like branches and unknown terpines referred to as T1 and T2, best recognized by their relative position and fluorescent color under long-waved (365nm) ultraviolet light on a TLC plate, along with other terpenes, zeorin and hydroxykaurane (**Illus. above right**). The species was named in honor of **John Cassady**, who was Dean of the School of Pharmacy at **Ohio State University** when he accompanied me on a field expedition to Baja California in May 1986.

Left: Thallus of *Niebla effusa*, held by the late **Daniel Norris**, bryologist and professor of botany at **Humboldt State University** when this photo was taken in March 1988, along the road from El Rosario to Punta Baja. Dr. Norris accompanied me on a lichen expedition to Baja California because of his interest in birding. He did not collect lichens, although during his last day there he did collect plant specimens that I identified for him in the field to deposit at the Humbolt State herbarium (HSC). I personally delivered the entire thallus intact to **Mason Hale**, well-known lichenologist at the **Smithsonian Dept. of Botany** where it became the type divided into numerous isotypes, and used by Dr. Hale to identify skyrin from the dark basal portion of the thallus. **Above:** *Niebla effusa* showing scale.

Epiphytic species of *Vermilacinia*, growing on branches of shrubs. *V. howei* above, *V corrugata* below. These and other species can completely cover branches.

An example of two species of *Niebla* in Baja California needing more study, *N. welwitschioides* Spjut & Sérus., ineditus (*N.* aff. *palmeri*, **(top)**, CAS, US, 17062), growing on sandy beach near San Quintin and *N. fimbriata* (**bottom**) on rock among cacti and thorny shrubs near San Antonio del Mar (type locality). These species could not be consistently distinguished by molecular data; for example, both occur in the same ITS clade, or in multiple clades using 6-loci. Yet anyone can see they differ, morphologically, ecologically, and also chemically in that both share sekikaic acid and triterpenes, while the welwitschioid species also produces divaricatic acid in less concentration. The epithet indicates resemblance to *Welwitschia mirabilis*, a gymnosperm endemic to the Namib Desert whose closest relative in Kern County is the genus *Ephedra*.

based on a 6-loci phylogeny correlated with morphological, chemical and ecological attributes such as growing on rocks. Related epiphytic species were not entirely resolved; those needing more study belong to a black-banded clade represented by the zebra, leopard, and tiger vermilacinias (lion excluded, no bears!) along with *V. howei*, and *V. nylanderi*, named after **R. Heber Howe (1875–1932)**, a naturalist who wrote about birds, lichens (North American Ramalinaceae) and dragonflies, and **William Nylander (1822–1899)**, the first lichenologist to apply chemical reagents to distinguish lichen species. A related clade with *V. corrugata* — easily identified by its sharply corrugated cortex and absence of a diterpene — includes four North American species. Until recently, all have been viewed as variations of a South American *Niebla ceruchis*, previously *Ramalina ceruchis*, first described by **Erik Acharius** in 1803 as *Parmelia ceruchis*. This name was transferred to *Vermilacinia* (*V. ceruchis* Spjut and Hale) in 1995, and in 1996 the species recognized as endemic to the Atacama Desert where it once grew in abundance on sand (Darwin specimen, Harvard University Herbaria, FH).

The species in the genus *Niebla*, which is endemic to North America, need more study. Those I recognized in 1996 would now seem broadly circumscribed. The majority of the 27 that we sampled in 2016, for example, could be justified if recognized only from their type locality. Thus, we suggest a micro-endemic pattern for the *Niebla* species. We see this pattern in California manzanitas (*Arctostaphylos*), buck-brushes and lilacs (*Ceanothus*) and other genera. For instance, nearly half of the 66 manzanita species are found in localized areas along the California coast ranges, and in *Ceanothus* new species are still being described from coastal plants previously studied, even though its species have not been resolved by molecular data.[ix]

Photo - Muriel Gottrop, Wikimedia

Welwitschia mirabilis

Additionally, **Rundel** and **Bowler**'s *Niebla* species outside North America were found to belong to *Ramalina* for those in the Mediterranean region, or to *Vermilacinia* for those in South America. The genus *Trichoramalina* described by Rundel and Bowler in 1974 (Bryologist 77: 191) included two species formerly classified in *Ramalina*, one in Baja California, *T. crinita*, the type species described by **E. Tuckerman** in *Ramalina* in 1883 (Bull. Torrey Bot. Club), and the other, *T. melanothrix*, along the coast of southwestern Africa. They were distinguished by hair-like cilia that extend from near margins or ends of thallus lobes. The first was returned to *Ramalina* in 2004 (Kashiwadani & Nash III, in LFSD Vol.2), whereas the other, *T. melanothrix*, we showed was neither a *Ramalina* nor a *Niebla* (Kistenich et al., Taxon 67: 893, 2018); consequently, it needed a new genus name, so we gave it one, *Namibialina* Spjut & Sérus. Future studies will need to collect fresh material at type locations and sample populations of each species to define their ecogeographical ranges; however, the occurrence of fog may be diminishing due to climate change as a number species were not seen at type locations we visited. ✿

ENDNOTES

i ***Niebla*** means fog in Spanish in reference to the genus confined to coastal fog; the name created by P. Rundel and P, Bowler (Mycotaxon 6:497-499, 1978) as a substitute name for *Desmazieria*, which had been in use in lichen taxonomy for 126 years before Gerhard Follmann first recognized the similarity to the grass genus name *Desmazeria* (Philippia 3:85-89, 1976), both named in honor of Barthélemy Dumortier (1797–1878), who studied grasses, lichens and also proposed a classification of fruit types in 1835. Under the International Code of Nomenclature (ICN), the slight one letter difference in spelling is insufficient to avoid being treated as homonyms despite Follmann's proposal to recognize them as different generic names. Rundel and Bowler disagreed with Follmann. Accordingly, the ICN requires that the earliest name be adopted, which in this case is a genus of grass described by Dumortier in 1822 (*Desmazeria*); thus, the new substitute genus name, *Niebla*, was created. See MM Jan 2020 for a similar story with *Forsellesia* (legit.) vs. *Glossopetalon* (illegit), and also R. F. Thorne and R. Scogin in Aliso 9: 171–178 ,1978.

ii ***Vermilacinia***. The genus name refers to the thallus being divided into narrow worm-like (vermis) branches (lacinia).

iii **Fruticose** refers to the coral-like or a bush-like growth of lichens.

iv **Skyrin** (C30H18O10) is a rare fungal anthraquinone isolated from

Penicillium islandicum with in vitro cytotoxicity that suppresses growth of HeLa, Vero, K562, Raji, Wish and Calu-1 cell lines. Skyrin treatment induces DNA fragmentation and other morphological changes leading to apoptosis in Human HL-60 promyelotic leukemia cells. (Sigma-Aldrich). In lichens skyrin is found in *Acroscyphus sphaerophoroides* (Caliciaceae) and reported by Hale to Spjut (pers. comm. 1988) isolated from a specimen he collected in Baja California later named *Niebla effusa*. See also A. Johnson and K. A., Klew. 2003. *Acroscyphus* (Caliciaceae) in North America. The Bryologist 106: 443–446 and C. F. Culberson. 1969. Chemical and Botanical Guide to Lichen Products, Univ. North Carolina Press, 188–189, and endnote #7.

v R W Spjut, A Simon, M Guissard, N Magain, and E Sérusiaux.2020. The fruticose genera in the Ramalinaceae (Ascomycota, Lecanoromycetes): their diversity and evolutionary history. MycoKeys 73: 1–68 & supplements.

vi RW Spjut. 1996. *Niebla* and *Vermilacinia* (Ramalinaceae) from California and Baja California. Sida Botanical Miscellany 14, 208 pp., 11 color plates.

vii RW Spjut, 1995. *Vermilacinia* (Ramalinaceae, Lecanorales), a new genus of lichens. Pp. 337-351 in Flechten Follmann; Contr. Lichen. in honor of Gerhard Follmann, F. J. A. Daniels, M. Schulz & J. Peine, eds., Koeltz Scientific Books, Königstein.

viii locus (plural loci) is a specific, fixed position on a chromosome where a particular gene or genetic marker is located

ix V. Thomas Parker, 2014. A newly described serpentine-endemic *Ceanothus* (Rhamnaceae) from coastal Marin County, California. Madroño, 61(4):399-406.

Thank You to:

... **Maria Jesus** for her engaging presentation on the plants in **Conglomerate Mesa** - a unique area worthy of study and protection.

... **John Karlik**, for an interesting and unusual look at "***Ecosystem Recovery in the Chernoblyl Exclusion Zone***" - not a subject we've seen examined before.

... **Dr. Anna Jacobsen** for sharing the results of the research she and husband, **Dr. Brandon Pratt,** did for a research article in the journal PNAS (Proceedings of the National Academy of Sciences) which they co-authored with an international team, on tree replacement patterns after drought-related tree die-off. There was a lot of interest – our chapter's largest Zoom meeting to date. ✿

ADOBE HOUSE UPDATE

by Don Turkal

IN MID-OCTOBER THE KERN COUNTY BOARD of Supervisors approved **Planning and Natural Resources' Finding of No Significant Impact (FONSI)** and authorized the release of funds for the **Adobe House Project**. The County expects to have the construction documents completed in late January and submitted to the Kern County building department for permitting, and then put out to bid in late March.

On November 28, **Diane Mitchell** and I met with **Bill Cooper** and other representatives of the **Kern River Parkway Foundation** at the Adobe House to discuss a new draft landscape plan of **Donald Woodard**, **Kern County General Services Division** landscape architect. Some of the topics discussed were: plant selection, watering methods, plant arrangement, and overall theme. Bill Cooper, President of the Kern River Parkway Foundation, shared these and other concerns with the landscape architect. A date for an on-site follow up meeting with the landscape architect is in the process of being scheduled.✿

Photo courtesy Don Turkal

Above: The Adobe House as it looks today.

California Native Plant Society

CNPS is the leader for providing reliable information on California native plants and plant conservation. Comprehensive information about California's flora and vegetation communities is available throughout the state for conservation and educational purposes. CNPS's leadership influences personal ethics and actions, as well as public policy for native plant protection.

"I KNEW THAT"

by Yvonne Turkal

IF YOU HAVE BEEN READING PRIOR *MIMULUS Memos* you will already know this, but in case we have acquired new members, here is our disclaimer:

> This column is about edible plants and the basic information comes from the book **Edible and Useful Plants of California**, by **Charlotte Bringle Clarke**, Univ. of California Press, 1977. The Kern Chapter of the California Native Plant Society isn't responsible for any of your results. Examples would be planting a suggested genus and species only to see it outgrow your expectations, or trying a recipe and finding it less than satisfactory.

Now, to pass along what I have read, observed, and some of my thoughts…

My family camped a lot (not in a lodge, not in a camper or trailer, but in a tent). Google can help you figure out what that is, if you are unfamiliar with the term "tent". My father and I would walk through the campground where he would attempt to teach me the names of trees and flowers. When I would sound uninterested or look in a different direction, he would have that discouraged look and I could hear his sigh of resignation. (Don't tell me you never had that look and/or sigh when you were a kid.) I loved camping, but it took me decades to be interested in anything related to trees or flowers. (Even vegetables were not in my childhood thoughts and now that's most of my diet!) My point? Don't be discouraged if you can't remember names of plants and/or trees as soon as you make their acquaintance. (I still can't remember people's names I see all the time)

Photo by joedecruyenaere

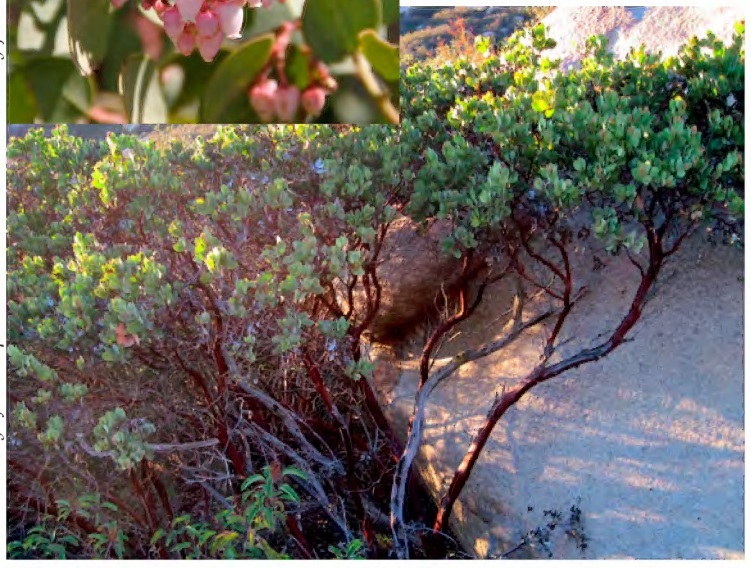


Photo courtesy of Calscape

Above: Big-berry Manzanita (*Arctostaphylos glauca*)

I do, however, know of one shrub/tree that could boost your confidence as it did mine.

Big-berry Manzanita (*Arctostaphylos glauca*) ……Now this is a shrub/tree with definite characteristics that even I can remember.

These lovely large shrubs or small trees are so different from the normal.

1. The leaves are gray-green and not the normal green-green or yellow-green shades.
2. Flowers on this lovely specimen are urn-shaped and clustered…so cute.
3. The fun way I can recognize this shrub/tree is by its beautifully tangled branches with their gorgeous red bark. Yep, red bark.

Clarke tells us that California has about 43 species of manzanita, most of which were used in some form for food by Native Americans and early settlers. The Spanish preferred the unripe green berries for drinks and jellies, while indigenous peoples collected the ripe fruit.

Photos courtesy Charles Webber CA Academy of Sciences

Left: green berries **Right:** ripe berries –

Manzanita Cider[1]

green manzanita berries
water
sugar or honey

Cover green berries with water in a saucepan and simmer 15 minutes or until somewhat soft. Bruise the berries but do not crush. Let stand overnight. Decant the liquid, let sediment settle and decant again. Sweeten if desired.

Want one? The CNPS website *Calscape* says they are available at the **Las Pilitas Nursery** located at 3232 Las Pilitas Road Santa Margarita, California. Check out their website: *laspilitas.com*

Now it's time for you to say …."*I knew that.*" ✿

REFERENCES:
1. Edible and Useful Plants of California, Clarke, p. 56

Oak Galls
Part I – Oak Galls

by Sasha Honig

IN THE BEGINNING THERE WAS A **TREE**, AN **apple** and a **wasp**. No, this is not the story of Eden. The apple was on an oak, most likely a **Valley Oak (Quercus lobata)** or a **Coast Live Oak (Quercus Agricola)**. The two species cover most of California, from the ocean to the Sierra foothills.

Photo by Sasha Honig

Oak "apples" –

The apple was round, shades of red – some folk might be reminded of small crabapples – except that it was on an oak tree along with a few acorns. Its outer skin was shiny, hard, and brittle. A slice into it would uncover a dry, fibrous interior – almost spongy in appearance. Holes, short channels, and even some large white crystalline splotches would complete the picture.

A sensible person would not persist in tasting it. The bitterness would discourage a second bite. This was not the forbidden apple that got Adam and Eve into so much trouble.

The wasp is a **California Gall Wasp** (***Andricus quercuscalifornicus***). In October or November it lays eggs on oak stems; there they stay until spring when they hatch. The new larvae burrow into the stem. As they do, they emit a growth hormone which shocks the stems' cell division into overdrive. New tissue seals off the area penetrated by the larvae and goes on to form a large ball around the larvae – the oak apple. It is green and moist at this point. (California Indians made a medicine with the juice.)

Oak stems were now protected from larvae feeding directly on them; this would have been immediately harmful to the tree but now the larvae were out of the way, shut inside the galls. The point is often made that oak galls do trees no great harm .

It is not a disaster for the larvae either, now completely enclosed inside the gall. Food surrounds them on all sides, after all; they settle down within their chambers and begin to eat. The gall gives them shelter and some protection against natural enemies such as birds, parasites, and inquilines. Birds peck at galls after larvae. Parasites find ways to pass through the gall's wall, and inquilines punch their ovipositors through the shell and lay their eggs inside. Wasp larvae are on the menu if the the ovipositor lands in a larval chamber. Normal gall maturation is stunted when this happens.

As weather warms, humidity in the gall decreases. Larvae pupate the gall in Fall and adult wasps appear. They make their way through the dry, pithy interior to just inside the gall's wall. When they are ready, the wasps usually chew a small hole and escape. Multiple holes correspond to the number of individual escapees.

Sources do not agree on whether or not oak apples have only one larva per gall OR MORE. Some of the galls in my stash have more than one hole, and there is one that has additional pin prick-size holes. Do they belong to parasites or to inquilines which had penetrated the gall's walls?

I've made cross sections of some galls and think I saw larval chambers and a few tunnels. The outer husk is brittle and the interior is very dry and crumbly. It would be easy to reduce the whole thing to a powder. Parts are white and a little shiny — almost crystalline — and seem softer than fine powder.

The cycle of oak apple wasps is not straight forward. In one scenario,

Photos 1 —4 – by Sasha Honig; 5 – by Peter J Bryant

Right from top to bottom: 1– California oak gall; 2– gall broken to reveal tunneling; 3– cross-section of mature oak apple gall. The wasp has left the gall but interior pits and show where the larva had been. The interior is dry and crumbles easily. The exterior shell is thin and brittle; 4– exterior of a gall showing differing sizes of exit holes; 5– the California oak gall wasp (*Andricus quercuscalifornicus*)

Photo – Sasha Honig

Showing the range of size in oak apple galls collected by the author.

larvae hatch later and their galls may be smaller than usual. There may be wasps who linger longer in the gall than their sisters and may even wait until the next year to come out.

California gall wasps are said to be parthenogenetic. Some sources are definite about this; others hedge their bets by saying no male has ever been seen (which may be to say they are extraordinarily hard to spot?).

Emergent females live about a week during which they lay eggs on oak stems, and complete their life cycle. Eggs hang onto the stems over winter, hatch larvae in spring, and it all begins again. Empty galls with the tell-tale holes hang on the tree or fall to the ground where they become a food source for other creatures in their ecosystem.

Photos – Wikimedia Commons- Franco Folini & Joe Holt

Above: The Marble Gall (*Andricus Kollari*) **Below:** The Urchin Gall (*Cynips quercusechinus*)

Friends **Lucy Clark** and **Clyde Golden** gave me galls from their oaks because they know I want to try dying fabric with them. I noticed that some were smaller and I wondered why. It is possible that a second species of oak gall wasps (*Andricus kollari*) lives in the vicinity. This small gall is the "marble gall".

More than one species of gall wasp can be present in the neighborhood. Clyde has seen a third kind (*Cynips quercusechinus*) on their land, which looks like a small pink sea urchin. Each oak gall wasp species causes a gall unique to the species in size, shape, color and texture. There are 700 species of gall wasps in North America. Among them, the California oak apple is the most common and largest.

Eighty-one oak galls on California native trees are featured on a website by the nature photographer **Joyce Gross**. Search: *Oak Galls of California*.

There is one oak gall that needs to be seen on a video to be appreciated. If you are curious, enter search term Jumping Oak Galls. Youtube has several videos but an exceptionally good one is *Gall Wasps of Chico, California* ✿

[*Ed. note: This is Part One of a three-part series on galls, their historical and current uses, and gall wasps. Part Two will discuss indigenous uses for the oak gall.*]

Green

by Suzanne Weller*

Color of life and nurture
Color of spring, birth of new life
Color of calm, absence of strife
Even in fall when leaves still turn
evergreens stay constant endure
Leaves breathing in taking in sun
breathing out air, pure oxygen
Emerald green, green serpentine
yellow and blue, green go between
Complements red, red shining sheen
Green light means go, your way is clear
Leave behind red, guilt, shame and fear
Take a deep breath, nature is near
✿.

* **Suzanne Weller** is a Kern CNPS member. This and another of her poems inspired by time spent in Yosemite appear on the *kernpoetry.com* website.

Photo by Nancy Nies

Rare Bakersfield Cacti Project

by Lucy Clark

SIX OF THE CACTI CREW WENT OUT TO THE **Nature Conservancy**'s **Tollhouse Ranch** on **November 6** to water the plants remaining from the autumn season's joint grasshopper attack/ **Bena Fire**. The view was bleak, as we drove up, dressed in our masks and garden gloves. The dirt was covered with ash, and the shrubs were mainly blackened skeletons. Our leader **Zach Principe**, was marking the survivors with flags, so we would find every one. He was most proud of one three-inch-tall pad which had grown through a bulldozed fire break.

The work was interesting — seeing which had survived and which had not, and what plants around our rare cacti had survived. However, the best part was seeing friends' faces, and the opportunity to talk from 6 feet apart, and while carrying pounds of water. We also found a plant, **alkali mallow** (*Malvella leprosa*), that had not been on the Tollhouse plant list, and with a bloom.

Zach reported 69 cacti survived, a 55% survival rate of those we transplanted three years ago. In some locations, only a single pad survived, while others had many. We were disappointed in the number, but considering the views of the local area, we thought the plants were lucky! Our thanks go to **Fred Chynoweth**, **Clyde Golden**, **Bill Moffat**, **Bill Nelson**, and **Don Turkal** for their work conserving the Bakersfield Cactus transplants.

Zach has a plan to transplant pads in 2021,to another nearby ranch the TNC has acquired, so be ready to respond when the call goes out for volunteers! The scenery is lovely, and the trains will pull their whistles, if we wave. Not to mention the masked company! ✿

Chapter ZOOM Meetings

upcoming TOPICS

(All **in-person** chapter meetings have been suspended until further notice.)

April *gall wasps and*, **2021 — Time TBA**
Presenter: **Nina House**
California Botanic Garden
Topic: ***Flora of Salmon Creek & Manter Meadow***

May, 2021 — OPEN

June 2021 — OPEN

July, August 2021 — NO PROGRAMS

September 2021 — OPEN

October, 2021 — Time TBA
Presenter: **Brooke Stutz**
Topic: ***Harry Potter's Muggles' Guide to Native Plants***

REGISTER for these events;
e-mail **Paul Gipe** (*pgipe@igc.org*)

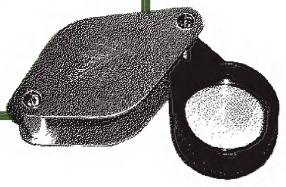


Photo by Paul Gipe

Right: Joshua tree (*Yucca brevifolia*) and creosote bush (*Larrea tridentata*) Saddleback Butte SP **9 December 2020.**

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California Native Plant Society
KERN CHAPTER

Mimulus Memo

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OAK GALLS (PART I)
I KNEW THAT (EDIBLE NATIVES)
FRUCTOSE LICHENS IN CALIFORNIA & BAJA CALIFORNIA

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The Kern Chapter of the
California Native Plant Society meets
the third Thursday of each month at:
Kern County Superintendent of Schools

California Native Plant Society

City Centre, Room 1A or 1B
1300 17th Street, Bakersfield, CA.
Chapter website: kern.cnps.org

The California Native Plant Society is a non-profit organization dedicated to the conservation of California native plants and their natural habitats, and to increasing the understanding, appreciation, and horticultural use of native plants. CNPS has 31 chapters throughout the state and membership is open to all persons — professional and amateur — with an interest in California's native plants. Members have diverse interests including natural history, botany, ecology, conservation, photography, drawing, hiking and gardening. As a Kern County resident, your membership includes Fremontia, *a quarterly journal with articles on all aspects of native plants; the* Bulletin, *a statewide report of activities and schedules; and* The Mimulus Memo, *the newsletter of the Kern Chapter.*

Join CNPS or renew your membership online at www.cnps.org.
Student/Limited Income – $25
Individual – $45
Family or Library – $75